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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,343	11/03/2003	Murali Sethumadhavan	RGP-0088	5279

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EXAMINER	
LAM, CATHY FONG FONG	
ART UNIT	**PAPER NUMBER**
1775	

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/700,343	SETHUMADHAVAN ET AL.	
	Examiner	Art Unit	
	Cathy Lam	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) *20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19 and 21-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

In view of the amendment filed on December 10, 2004, the pending claims are continued to be unpatentable as following:

Election/Restrictions

1. This application contains claim 20 which is drawn to an invention nonelected without traverse in Paper filed on December 10, 2004. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over St. Lawrence et al (US 5972811) in view of Nakacho et al (US 6528559) and El Sayed et al (US 5416143).

St. Lawrence discloses an electrical substrate laminate comprised of a prepreg and conductive layer(s) (46,46') (Fig. 2).

The conductive layers are copper foils, laminated onto both surfaces of the prepreg (col 4 L 43-49 & col 6 L 45).

The prepreg is comprised of a copolymer of butadiene and isoprene in a ratio between 1:9 and 9:1 (col 6 L 37-39). The polybutadiene and polyisoprene resins can be a liquid resin which is a low molecular weight polymer (col 5 L 24-32).

The prepreg further comprised of a corsslinking agent, a filler, a curing agent and a flame retardant (col 5 L 16-19).

The filler can be particulates such as polytetrafluoroethylene (col 14 L 27). The filler can also be inorganic fillers such as titanium dioxide, amorphous silica and magnesia, etc. (col 7 L 17-24). The fillers are pretreated with a silane coupling agent (col 7 L 31-38 & col 8 L 48-51).

A glass woven web is reinforced into the liquid resin (col 7 L 66-67). The curing agent such as dicumyl peroxide, t-butylperbenzoate, etc. and the fire retardant additive such as a halogen containing compound, are all incorporated into the resin material (col 8 L 22-37). A free radical curable polymer such as acrylate monomer (as a crosslinking agent) can be used to cure the resin (col 6 L 46-49).

In example 2, the water absorption is 0.09 wt% (i.e. < 0.2 wt%), and in the examples (except example 3) the dielectric constants are < 4.0 (col 11 L 43-47).

St. Lawrence discloses the present invention but is silent about using magnesium hydroxide as a fire retardant in the prepreg.

Nakacho discloses a halogen free flame retardant that is incorporated into a resin composition. The resin composition is moldable and used in electronic products.

Nakacho's resin composition has a rating of V-0 in a flame retardancy test UL-94 (col 2 L 5-7).

The halogen free flame retardant can be magnesium hydroxide (col 1 L 44-45). The resin composition can be a mixture of polyisoprene and polybutadiene, further

comprised of a fluorine containing resin (col 8 L 34-38 & col 5 L 59-60). The flame retardant is in an amount of 0.1-50 wt% per 100 wt% of the resin (col 5 L 51-54).

Furthermore, a glass fiber can be incorporated into the resin composition (col 9 L 38).

El Sayed teaches a polyamide moulding compound comprised of a thermoplastic polyamide, a reinforcing material, inorganic fillers and a elastomer.

The reinforcing material is a glass fiber and the inorganic fillers are magnesium hydroxide particles, both incorporated into the polyamide resin.

The magnesium hydroxide particles is known to be used as a flame retardant (col 2 L 15-18). The magnesium hydroxide is in the amount of from 40-60 wt% and it is surface treated with aminosilanes (col 2 L 67-68, col 3 L 39-40).

The moulding compound is formed into a product that has desired mechanical and electrical properties and fire behaviour in the standard of UL 94 rating V-0 (col 3 L 58- col 4).

In view of the prior art teachings, one skill in the art would substitute magnesium hydroxide to be the flame retardant material because inorganic metal hydroxides do not reduce the molecular weight of the resin thus improve mechanical properties and heat resistance of the resin, it also prevents dripping (Nakacho, col 2 L 60-63 & col 9 L 19-27).

Furthermore, in view of Nakacho and El Sayed's teachings, it would have been obvious to pretreat the inorganic fillers with a coupling agent especially with a silane or

an aminosilane because it is conventional and improves the bonding between the fillers' surface and the resin.

Response to Arguments

2. Applicant's arguments filed December 10, 2004 have been fully considered but they are not persuasive. The applicant in the remarks traverses the art rejection.

3. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cathy Lam

Cathy Lam
Primary Examiner
Art Unit 1775

cfl
March 03, 2005